

"To promote understanding and appreciation of the religious and spiritual values which abide in the processes and relationships of agriculture and rural life; to define their significance and relate them to the Christian enterprise at home and abroad."

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ETHICS OF SOIL CONSERVATION **

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"Of all the sinful wasters of man's inheritance in the earth--and all are in this regard sinners--the very worst are the people of America."

This indictment was made thirty-two years ago by the noted geologist, Nathaniel Shaler of Harvard University. He deplored waste, and advocated conservation of natural resources against the onslaughts of a vigorous people equipped with high powered machines.

A transition from exploitation to conservation is now imperative to the well-being and well-doing of the nation, and the transition period should be made as short as possible. A new ethics of soil conservation is developing. It recognizes the land as the bountiful mother of mankind which nourishes a people, and yet whose capacity in this respect has limitations. The earth, not being made by human hands, is therefore divine. Our dominion over it is to use wisely, not abuse the good earth, upon which we and our posterity are dependent. Our relations to the earth are more than economic; they are moral. We are custodians of the bountiful land, its waters, its plant and animal life, its hidden riches, and perhaps most important of all, its soils, for upon the conservation of productive lands depends the life span of a civilization. As we subdue and replenish the good earth so we express our obligations to our fellow men of the present as well as of the future.

Conservation of non-renewable resources such as coal, oil, and the metals consists in avoiding waste and in developing substitutes progressively as supplies are depleted. But the use and care of soils and waters, for which there are no substitutes, lay a special responsibility upon each succeeding occupant of the land. If any tenant of farm lands allows the utility of the soil to be destroyed or impaired, succeeding owners are condemned to scarcity and want. Only within the present generation has the true nature of this erosion menace to national welfare dawned upon thoughtful people. Maintaining the usefulness of these resources is being recognized as a high social duty.

Inconsiderate exploitation of the land resources of the country have set in motion processes which have been and are still undermining the carrying capacity of the land for a human population with high standards of living. It is undermining the basis of the American dream, and is condemning tillers of the soil to reduced returns for their efforts and fertilizers.

Few realize the wide extent of damage to national welfare and to the supposedly inexhaustible resources of our nation by this insidious disease of soil erosion. A general erosion survey of the land area of continental United States has disclosed stupendous destruction of the original soil resources. Already in the short space of time, in the possible life of our nation, water and wind erosion has destroyed for further cultivation approximately 100 million acres of good

farming lands. Such a vast acreage is approximately equal to the area of all the New England States, and in addition New York and Pennsylvania. Of this great area fifty-one million acres or an area equal to the State of Kansas, have been so cut up with gullies as to destroy their future utility for cultivated crops. Wind erosion has seriously damaged and rendered useless for cultivation fully four million acres.

Furthermore, an additional area of approximately one hundred million acres still in cultivation has lost one-fourth to three-fourths of the topsoil, resulting in a reduction of more than one-half of its original productivity. Still another one hundred million acres are undergoing serious wastage of topsoils by erosion.

Soil erosion is most active on sloping lands. Of the required three hundred and sixty-five million acres for our crop needs, we have only about seventy-five million acres of practically level arable lands on which the erosion hazard is negligible. Only with special measures in erosion control and soil conservation may the action of water erosion be retarded on sloping lands or wind erosion be checked in arid dust regions.

Erosion processes, whether by water or wind, sort soils with the precision of a machine. Fine particles, containing the highest content of fertility, are picked up and the mud-laden streams carry the life blood of the fields and may dump this rich burden in the ocean. Other times it may be dropped where it silts up costly reservoirs and reduces their utility. This, in turn, causes calamity to the areas dependent upon their storage capacity for irrigation; again these clogged streams may cause serious floods.

Wind erosion sweeps and sorts out the fine particles and wafts them aloft to undetermined destinations; where as the coarser fractions are left behind on wind-swept fields to form sandy hummocks. These grow into menacing desert-forming sand dunes if the process is not checked in time.

It is disastrous business economics to waste or destroy one's principal, or year after year fail to balance one's budget. Yet this is what the American people have been doing. With appalling rapidity we have used up our principal--the stored resources--which our pioneer fathers found on this pristine continent. We have riotously poured forth our oils, mined our minerals, destroyed our forests, reduced or exterminated our game and fish, with little effort at long-time planning or conservation. We cleared rich virgin lands, then plowed up and down the slopes. Each furrow drained off the fertility, which had taken centuries to accumulate. In a comparatively few years, dependent upon the steepness of the slopes, the economic value of the land was gone and the farmer moved on. The abandoned fields were left to be further destroyed by erosion and menace adjacent lands and streams. This process of exploitation was continued until our frontier lands dissolved in the Pacific.

Now, the American Dream of high standards of living must be maintained by the conservation of the lands and soils which we are now using. Exploitation becomes self-limiting and suicidal. For the very endurance of a race, an ethical approach becomes imperative. This ethical motivation identifies the interests of the individual with those of others, from one's own family of today and of tomorrow outward through local groups to the nation, and eventually to mankind. It draws support also from the experience of those who have lived in the past. It has length and breadth within present areas, depth in the past and height in the future.

The ethics of soil conservation calls for the recognition that in this country there is now a new social economy. No longer may the wasteful exploiter of natural

are: (1) to acquire and disseminate facts and information concerning the character of soil erosion by wind and water, the effects of such erosion including rainfall, runoff, floods, reservoir silting, and soil blowing, and the character of the preventive and control measures needed; (2) to promote the cooperation of all residents in the geographical area covered by the association, in a concerted and intelligent effort to prevent and control soil erosion and the wastage of soil and moisture; (3) to bring about widespread adoption of accepted erosion-control and erosion prevention practices. Already the legislatures of twenty-two States have provided laws for the forming of Soil Conservation districts.

This Soil Conservation program, while needing the participation of all, is far beyond the powers of any individual working separately to carry out. It must be recognized that the action of a farmer on high land may have serious consequences for lower lying lands of others in causing overwash of erosional debris. The effects of silting lands on streamflow, reservoirs, floods and navigation also arise from methods of land use, and are too large to be dealt with by individuals. Society must in the end be responsible for dealing with the problem of conserving land resources. And for this purpose a social mechanism is required and has been established in the form of the Soil Conservation Service of the Department of Agriculture.

The new land ethics accepts man's responsibilities in the preservation of our soils. Farms must be thought of in terms of stewardship, to be turned over to future generations in a condition of continued fertility and productivity. Individual rights do not permit those in control at any one time, by carelessness or indifference, to condemn future populations to deficiency of food supplies.

"It is idle," wrote Professor Shaler in 1905 in Man and Earth, "nay, it is criminal--to sacrifice the bread of man to notions of individual rights in the earth. Granting all that the most extreme individualist can claim, the right of mankind to the conditions that make its life possible must brush aside the ignorances and negligences of the momentary tenant. Until this judgment is expressed in adequate action, man will not begin to do his duty by his inheritance."

The recognition that one belongs to a group that has come down from the remote past and has possibilities of very long continuance on the earth in the future furnishes the ethical motive for soil conservation.

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greater than any present tax burden. Remnants of terraces in older civilizations as the Incas, show the labor and expense to which a civilization will go to maintain a food supply.

Economic over-production of crops of the present year cannot justify wasteful exploitation of a basic resource. Rather it is of first importance that measures of conservation be undertaken and actively carried out while the soil resources are ampie and not wait until they are depleted below population requirements. A nation, as an individual, can only be provident while in the possession of a certain degree of abundance; a starving farmer will eat his seed grain. Now is the accepted time to carry on adequately and vigorously the objectives of soil conservation set up in the Soil Conservation Acts of 1935 and 1936, and the Omnibus Flood Control Act of 1936.

Such a program of erosion control and soil conservation can not be sustained by current economics alone; it must be supported by a long range economics beyond the calculations of private enterprise; it must be founded on what is right for the greatest number of people in the long run; it thus becomes a matter of national ethics.

With the land of the nation occupied, and with the use of land so beset by inducements to wasteful soil exploitation, the nation has resolutely faced the problem. A beginning has been made in the Act of Congress of 1935. The preamble of the Act clearly states a new national economy:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is hereby recognized that the wastage of soil and moisture resources on farm, grazing, and forest lands of the Nation, resulting from soil erosion, is a menace to the national welfare and that it is hereby declared to be the policy of Congress to provide permanently for the control and prevention of soil erosion and thereby to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands and relieve unemployment, and the Secretary of Agriculture, from now on, shall coordinate and direct all activities with relation to soil erosion....."

This Act marks the beginning of a new era in the relations of the American people to their land. A national policy has been established to change direction from a self-limiting policy of exploitation to a far-reaching and sustaining policy of conservation, including cooperation with the land user in such conservation. It introduces an ethical motivation in land use; it provides for the discovery in cooperation with land users of ways to deliver the nation from the evil of soil wastage and to find the way of social righteousness in the use of soil resources.

The Soil Conservation Service now carries on research in many lines directly concerned with the conservation of soil and water. It cooperates with other research bureaus of the Department of Agriculture and with the State agricultural experiment stations in studies related to such conservation. It conducts large numbers of projects to demonstrate approved methods in various sections of the country. It is setting up the criteria for safe and sustained land use, and demonstrating the ways and means of their application to the land in cooperation with land owners.

In many places the way has been prepared for this governmental form of organization by voluntary soil conservation associations. The main purposes of such

resources be honored above those who conserve our resources which must benefit future generations as well as our own.

Some of the implications of exploitative use of land appear in the history of a certain farm in Alabama. Its record covers a mere fraction in the life of a nation, dating from the breaking of the virgin soil nearly a century ago. It is one of the more tragic cases but is representative of thousands of farm histories with the same trend.

This Marable farm of 160 acres is part of the tract of land ceded by the Creek Indians in 1932. The land was first purchased from the Government in 1840, resold in 1863 and again in 1882. The John W. Smith, who farmed it fifty years ago was considered a prosperous farmer. The farm was transferred to Champ Marable in 1918, and yielded good crops for a few years. After his death, the farm was managed by his son, Irma Marable. He worked hard at farming but had to haul and sell firewood of evenings to Dadeville to make sufficient money for living expenses. Along with decreasing crop yields and helping errant brothers, Irma Marable became despondent and hanged himself to a rafter in his dilapidated barn in 1935. Since that time the surviving brother has also found it necessary to supplement the income from the farm by working at a local cotton mill to make a living for his own and his widowed sister's family. Thus, in less than a century, beginning with the Marable boys, the economic value of the farm as a maintenance for the family was destroyed, not only for them but for all posterity and wastage of the soil by erosion undoubtedly was the underlying cause for the exhaustion of courage and hope leading to this human tragedy.

A survey in 1936 by the Soil Conservation Service discloses the virgin profile of this area, including topsoil and subsoil, varied in depths from five to seven feet, whereas the soil on most of the Marable farm was now only six to ten inches deep. The network of gullies had generally cut down to bedrock. More than four feet of soil, including all of the topsoil and much of the subsoil, had been washed away from most of this farm by accelerated, man-induced erosion.

While the wastage of soil by erosion on this farm was gradual in terms of single years, it was rapid in terms of a generation and cataclysmic in the life of a nation. It is nothing short of self-destructive and suicidal agriculture. Erosion undermines the very foundation of an enduring social order and a civilization when families and their lands are reduced from being a community asset to a community liability.

The complexity of problems in land use often obscures the effects of this insidious cancer-like process of soil erosion. In the past century several factors have conspired to disguise progressive wastage of soils and their productivity. First, land values have uniformly increased with settlement and growth of population. New lands to the west furnished, until the present generation, an escape from the worn out lands of the older settled areas. Second, increasing application of commercial fertilizers have sometimes offset the losses of plant foods in eroded soils. Third, improvement in crop plants be selection, breeding and more recently by hybridization has further offset the apparent effects of soil wastage by erosion. Furthermore, adding to these complicating factors, variable farm product prices and farm tenancy still further obscure trends. Price economics are responsive to relative supplies, demands and purchasing power for the products of the soil. They show now a low correlation to the present stage of soil wastage on a national scale; for population pressure on total land productivity has not yet reached a critical stage for the country as a whole. It has, however, for certain localities. Without an adequate diagnosis of the menace and evils of soil erosion, a deadly disease of soil wastage in national economy may be overlooked until the remedy will become an extremely costly but inescapable burden upon the nation. It will without question be far

